IN THE CLAIMS:

1. (currently amended) A system for performing a manufacturing operation relative to a first path comprising:

a plurality of first carriages mounted for independent movement relative to a first path;

a plurality of first active elements operatively associated with at least one first reactive element to produce relative movement between the first carriages and the first path, with each of said first active elements being independently activated to control such relative movement;

a raw ~~plurality of rows of~~ switching sensors for each of said first carriages, said raw being arranged along said first path, ~~each said row being operatively associated with at least one of said first carriages,~~ each switching sensor ~~of a particular one of said rows~~ being operatively associated with a particular one of said first active elements so as to enable activation of that particular first active element ~~enabling a corresponding switching signal~~ when one of said ~~associated~~ first carriages associated with said switching sensor ~~enters into~~traverses within operative proximity of said switching sensor;

at least one controller for controlling the activation of said first active elements ~~based at least in part on said switching signals~~ in order to provide independent control of at least one motion parameter of each said first carriages; and

a first tool associated with each first carriage for performing at least part of the manufacturing operation~~, the first tool interacting with the associated first carriage during the relative movement between the associated first carriage and the first path~~;

wherein the active elements are selectively activated by the controller to independently direct the first carriages along the path so that the manufacturing operation can at least partially be conducted by the first tool.

2. (original) The system of claim 1, wherein the first carriages are movable and the first path is fixed, and the first path is a curvilinear path.

3. (currently amended) The system of claim 1, further comprising:

a first row of position sensors arranged along the first path;

a second row of position sensors arranged at different locations along the first path relative to the first row of position sensors;

a first position magnet affixed to a primary one of the first carriages at a location that corresponds to the first row of position sensors; and

a second position magnet affixed to a secondary one of the first carriages at a location that corresponds to the second row of position sensors;

wherein the first and second rows of position sensors are independently responsive to the first and second position magnets respectively as the primary and secondary carriages traverse the first path, and wherein the controller activates the first active elements based on signals generated by the first and second rows of position sensors to control the movement of the primary and secondary first carriages independently.

4. (original) The system of claim 1, wherein the motion parameter is one or more of force, acceleration, velocity, direction, position, torque, or jerk.

5. (currently amended) The system of claim 1, wherein the first active elements are electrically conductive coils that are electrically insulated from neighboring coils and arranged along the first path, with each of said coils, when ~~enabled~~activated, establishing an electromagnetic field that is effective to influence said first reactive element when said first reactive element is associated with said electromagnetic field.

6. (currently amended) The system of claim 5, wherein the controller controls the ~~enablement~~ activation of respective ones of said coils as a function of the location of each first carriage along the first path so that each first carriage is independently controlled.

7. (currently amended) The system of claim 1, further comprising:

at least one second path having a plurality of second carriages mounted for independent movement relative to the second path, said second carriages having associated therewith at least one motion parameter;

a plurality of second active elements operatively associated with at least one second reactive element to produce relative movement between the second carriages and the second path, with each of said active elements being independently activated to control such relative movement;

said at least one controller also for controlling the activation of said second active elements in order to provide independent control of the at least one motion parameter ~~of each said second carriage~~,

wherein the first tool associated with each first carriage cooperates with the second carriage to perform the manufacturing operation.

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8. (currently amended) The system of claim 7, wherein the first and second carriages are controlled to cooperate ~~to conduct~~ in the manufacturing operation.

9. (original) The system of claim 7, wherein at least one first reactive element is associated with each first carriage and at least one second reactive element is associated with each second carriage.

10. (original) The system of claim 7, further comprising a second tool associated with said second carriage for cooperating with the first tool to perform at least part of the manufacturing operation.

11. (original) The system of claim 7, further comprising a second controller, with the first controller controlling activation of said first carriage, and said second controller controlling activation of said second carriage.

12. (currently amended) The system of claim 11, wherein the first and second active elements are electrically conductive coils that are electrically insulated from neighboring coils and arranged along the first and second paths, with each of said coils, when ~~enabled~~activated, establishing an electromagnetic field that is effective to influence the first and second reactive elements when the reactive elements are associated with the electromagnetic fields.

13. (currently amended) The system of claim 12, wherein the first controller controls the ~~enablement~~ activation of respective ones of said coils on the first path as a function of the location of each first carriage along the first path so that each first carriage is independently controlled, and the second controller controls the ~~enablement~~ activation of respective ones of said coils on the second path as a function of the location of each second carriage along the second path so that each second carriage is independently controlled.

14. (original) The system of claim 13, wherein the first and second controller are a single controller.

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15. (original) The system of claim 7, further comprising at least one third path.

16. (original) The system of claim 1, wherein the controller includes a multiplexer.

17. (original) The system of claim 1, wherein more than one first carriage is provided and the first carriages are controlled independently from one another along the path.

18. (currently amended) The system of claim 1, further comprising:

a plurality of second carriages mounted for independent movement relative to a second path; and

a plurality second active elements operatively associated with at least one second reactive element to produce relative movement between the second carriages and the second path, with each active element being independently activated to control such relative movement,

wherein the controller controls the activation of said active elements in order to provide independent control of the motion parameters of each of said first and second carriages, and the first and second carriages are controlled to meet as they travel along at least a portion of the path so that the manufacturing operation can be conducted.

19. (original) The system of claim 18, further comprising a first tool associated with each first carriage for performing at least part of the manufacturing operation.

20. (original) The system of claim 19, further comprising a second tool associated with each second carriage, wherein the first and second tools cooperate to perform the manufacturing operation.

21. (currently amended) A method for performing a manufacturing operation relative to a first path, comprising:

mounting a plurality of first carriages for independent movement relative to a first path;

operatively associating a plurality of first active elements with at least one first reactive element to produce relative movement between the first carriages and the first path, with each first active element being independently activated to control such relative movement;

arranging a plurality of rows of switching sensors along said first path, there being a raw for each of said first carriages;

operatively associating ~~a particular one of said rows with at least one of said first carriages~~each of said switching sensors with a particular one of said first active elements so as to enable activation of that particular first active element~~, each said sensor of said particular row enabling a corresponding switching signal~~ when one of said ~~associated~~ first carriages associated with said switching sensor traverses ~~enters~~ into operative proximity of said switching sensor;

associating a first tool with each first carriage for performing at least part of the manufacturing operation; and

controlling the activation of the first active elements ~~based at least in part on said switching signals~~ to direct the first carriages along the first path where the manufacturing operation is at least partially conducted by the first tool.

22. (original) The method of claim 21, wherein the first carriages are movable and the first path is fixed, the first path is a curvilinear path and the first active elements are

selectively activated to independently direct the first carriages along the first path.

23. (original) The method of claim 21, wherein each first carriage has at least one motion parameter and the motion parameter is one or more of force, direction, velocity, acceleration, position, torque, or jerk.

24. (currently amended) The method of claim 21 for performing a manufacturing operation relative to first and second paths, further comprising:

mounting a plurality of second carriages for independent movement relative to a second path;

operatively associating a plurality of second active elements with at least one second reactive element to produce relative movement between the second carriages and the second path, with each active element being independently activated to control such relative movement; and

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controlling the activation of said first and second active elements in order to provide independent control of each first and second carriage so that the first and second carriages cooperate as they move along at least part of the path in order for the manufacturing operation to be conducted.

25. (original) The method of claim 24, which further comprises associating a first tool with each first carriage and associating a second tool with each second carriage and controlling the first and second tools to cooperate to conduct the manufacturing operation.

26. (original) The method of claim 25, which further comprises moving the first and second carriages in unison along the first and second paths as the first and second tools cooperate to conduct the manufacturing operation.

27. (currently amended) A system for performing a manufacturing operation relative to first path and a second path comprising:

a plurality of first active elements arranged along a first path;

a plurality of second active elements arranged along a second path;

at least one first carriage mounted for movement relative to the first path, ~~the~~ each first carriage having a first tool ~~affixed thereto,~~ and a first reactive element responsive to activation of the first active elements to produce relative movement between the first carriage and the first path; and

at least one second carriage mounted for movement relative to the second path, ~~the~~ each second carriage having a second tool ~~affixed thereto,~~ and a second reactive element responsive to activation of the second active elements to produce relative movement between the second carriage and the second path;

at least one controller providing independent control of the activation of each one of the first and second active elements in order to provide independent movement of each of the first and second carriages relative to the first and second paths, wherein the first and second tools ~~affixed to the first and second carriages~~ cooperate to perform at least part of the manufacturing operation.

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28. (currently amended) A system for performing a manufacturing operation comprising:

a plurality of carriages including at least one primary carriage, and at least one secondary carriage, said primary and secondary carriages being mounted for independent movement relative to each other and relative to a path, each of said primary and secondary carriages having an associated reactive element ~~affixed thereto~~;

a plurality of active elements disposed along said path, said active elements being operative to establish fields when ~~enabled~~activated, said fields influencing said reactive elements and causing relative motion between the carriages and the path;

a primary row of switching sensors arranged along said path;

a secondary row of switching sensors arranged at different locations along said path relative to said primary row of switching sensors;

at least one row of position sensors arranged along said path;

a primary switching magnet affixed to each said primary carriage at a location corresponding to said primary row of switching sensors, each said switching sensor in said primary row being responsive to said primary switching magnet and operative to

generate a primary switching signal for enabling activation of an associated one of said active elements when a primary carriage is in proximity to said switching sensor;

a secondary switching magnet affixed to each said secondary carriage at a location corresponding to said secondary row of switching sensors, each said switching sensor in said secondary row being responsive to said secondary switching magnet and operative to generate a secondary switching signal for enabling activation of an associated one of said active elements when a secondary carriage is in proximity to said switching sensor;

a plurality of position magnets affixed to said carriages at locations that correspond to said at least one row of position sensors, each said position sensor being responsive to at least one position magnet, and being operative to generate a position signal indicative of the position of one of the carriages along said path; and

a controller responsive at least to said position signals, and being operative to provide a controlled amount of electrical energy to each enabled active element to effect a desired motion parameter for each of said primary and secondary carriages based on said position signals, said controller being operative to control the movement of said primary carriages independently relative to the movement of said secondary carriages.

29. (previously added) A system as recited in claim 28, wherein:

said at least one row of position sensors disposed along said path includes,

a primary row of position sensors arranged along said first path, and

a secondary row position sensors arranged at different locations along said path relative to said primary row of position sensors; and

said position magnets include,

a primary position magnet affixed to each one of said primary carriages at a location that corresponds to the primary row of position sensors, wherein each of said position sensors in said primary row is responsive to said primary position magnet as said associated primary carriage traverses said path, and operative to generate a primary position signal indicating the position of said primary carriage, and

a secondary position magnet affixed to each one of said secondary

carriages at a location that corresponds to the secondary row of position sensors, wherein each of said position sensors in said secondary row is responsive to said secondary position magnet as said associated secondary carriage traverses said path, and operative to generate a secondary position signal indicating the position of said secondary carriage.

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